L6 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1993:602977 CAPLUS
DN 119:202977
TI Synthesis of perfluoropropane
IN Webster, James L.; Swearingen, Steven H.; Bruhnke, Douglas W.; Manzer, Leo E.; McCann, Elrey L.
PA du Pont de Nemours, E. I., and Co., USA
SO U.S., 6 pp. Cont. of U.S. Ser. No. 734,016, abandoned.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 5220083	A	19930615	US 1992-826296	19920128
PRAI US 1989-452403		19891219		
US 1991-734016		19910722		

OS CASREACT 119:202977
AB A process carried out in the vapor phase for the prepn. of perfluoropropane consisting essentially of reacting propane, propylene and partially or totally halogenated C-3 acyclic hydrocarbons with HF and Cl2 at a temp. of 100-550.degree. in amts. such that the ratio of HF to Cl2 is between 1 and 7, in the presence of a solid metal-contg. salt or oxide catalyst; and recovering the perfluoropropane is claimed. Thus, propylene was treated with excess HF in a tubular reactor over CrOx/Cr2O3 at 445.degree. with a contact time of 0.30 s, using a flow of 35 mL/min HF, 15 mL/min Cl2, and 1.0 mL/min propylene to give 25% F3CF2CF3, 35% C3F7Cl, and 41% CF3CCl2CF3, along with 0.4% low mol. wt. degrdn. products. Therefore, the yield to F3CF2CF3 and recyclables was 99%.

L6 ANSWER 2 OF 3 USPATFULL on STN
AN 2003:153700 USPATFULL
TI Materials and methods for the production and purification of chlorofluorocarbons and hydrofluorocarbons
IN Iikubo, Yuichi, West Lafayette, IN, UNITED STATES
Owens, Stephen, White Pine, TN, UNITED STATES
Cohn, Mitchel, West Lafayette, IN, UNITED STATES
Brandstadter, Stephan M., Indianapolis, IN, UNITED STATES
Hedrick, Vicki E., Brookston, IN, UNITED STATES
Boggs, Janet K., Brownsburg, IN, UNITED STATES
Qian, John, West Lafayette, IN, UNITED STATES
Sacarias, Julie, El Dorado, AR, UNITED STATES
PI US 2003105368 A1 20030605
AI US 2001-966158 A1 20010928 (9)
DT Utility
FS APPLICATION
LREP BAKER & DANIELS, 300 NORTH MERIDIAN STREET, SUITE 2700, INDIANAPOLIS, IN, 46204-1782
CLMN Number of Claims: 88
ECL Exemplary Claim: 1
DRWN 7 Drawing Page(s)
LN.CNT 2001
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Methods and materials are provided for the production of essentially isomerically pure perhalogenated and partially halogenated compounds. One embodiment of the present invention provides a process for the production of essentially isomerically pure CFC-216aa. Other embodiments include processes for the production of CFC-217ba and HFC-227ea. Particular embodiments of the present invention provide separation techniques for the separation of chlorofluorocarbons from HF, from other chlorofluorocarbons, and the separation of isomers of halogenated compounds. Still other embodiments of the present invention provide catalytic synthetic techniques that demonstrate extended catalyst

lifetime. In other embodiments, the present invention provides catalytic techniques for the purification of isomeric mixtures.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 3 OF 3 USPATFULL on STN
AN 91:60780 USPATFULL
TI Chromium oxide catalyst composition
IN Lerou, Jan J., Chadds Ford, PA, United States
PA E. I. Du Pont de Nemours and Company, Wilmington, DE, United States (U.S. corporation)
PI US 5036036 — 19910730
AI US 1989-365594 19890613 (7)
DT Utility
FS Granted
EXNAM Primary Examiner: Shine, W. J.
LREP Shipley, James E.
CLMN Number of Claims: 5
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 258
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB An improved Cr.sub.2 O.sub.3 catalyst composition, prepared by pyrolysis of ammonium dichromate, which contains less than 100 ppm of alkali metal and is useful in HF hydrofluorination reactions.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:282507 CAPLUS
DN 138:289365
TI Materials and methods for the production and purification of chlorofluorocarbons and hydrofluorocarbons
IN Iikubo, Yuichi; Owens, Stephen; Cohn, Mitchel; Brandstadter, Stephan M.; Hedrick, Vicki E.; Boggs, Janet K.; Chien, John Chengping; Sacarias, Julie
PA Pcbu Services, Inc., USA
SO PCT Int. Appl., 66 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003029173	A2	20030410	WO 2002-US30729	20020927
	WO 2003029173	A3	20031030		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	US 2003105368	A1	20030605	US 2001-966158	20010928
PRAI	US 2001-966158	A	20010928		

OS CASREACT 138:289365
AB Methods and materials are provided for the prodn. of essentially isomerically pure perhalogenated and partially halogenated compds. One embodiment of the present invention provides a process for the prodn. of essentially isomerically pure CFC-**216aa**. Other embodiments include processes for the prodn. of CFC-**217ba** and HFC-**227ea**. Particular embodiments of the present invention provide sepn. techniques for the sepn. of chlorofluorocarbons from **HF**, from other chlorofluorocarbons, and the sepn. of isomers of halogenated compds. Still other embodiments of the present invention provide catalytic synthetic techniques that demonstrate extended catalyst lifetime. In other embodiments, the present invention provides catalytic techniques for the purifn. of isomeric mixts.

L12 ANSWER 2 OF 4 USPATFULL on STN
AN 2004:9668 USPATFULL
TI Processes for the purification and use of 2-chloro-1,1,1,2,3,3,3-heptafluoropropane and zeotropes thereof with **HF**
IN Miller, Ralph Newton, Newark, DE, United States
Rao, V. N. Mallikarjuna, Wilmington, DE, United States
Swearingen, Steven H., Wilmington, DE, United States
PA E. I. du Pont de Nemours and Company, Wilmington, DE, United States (U.S. corporation)
PI US 6677493 B1 20040113
AI US 1999-283449 19990401 (9)
PRAI US 1998-80709P 19980403 (60)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Richter, Johann; Assistant Examiner: Price, Elvis O.
CLMN Number of Claims: 19
ECL Exemplary Claim: 1
DRWN 1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 610

AB A process is disclosed for the separation of a mixture of **HF** and CF.sub.3CClFCF.sub.3. The process involves placing the mixture in a separation zone at a temperature of from about -30.degree. C. to about 100.degree. C. and at a pressure sufficient to maintain the mixture in the liquid phase, whereby an organic-enriched phase comprising less than 50 mole percent **HF** is formed as the bottom layer and an **HF**-enriched phase comprising more than 90 mole percent **HF** is formed as the top layer. The organic-enriched phase can be withdrawn from the bottom of the separation zone and subjected to distillation in a distillation column to recover essentially pure CF.sub.3CClFCF.sub.3. The distillate comprising **HF** and CF.sub.3CClFCF.sub.3 can be removed from the top of the distillation column while essentially pure CF.sub.3CClFCF.sub.3 can be recovered from the bottom of the distillation column. The **HF**-enriched phase can be withdrawn from the top of the separation zone and subjected to distillation in a distillation column. The distillate comprising **HF** and CF.sub.3CClFCF.sub.3 can be removed from the top of the distillation column while essentially pure **HF** can be recovered from the bottom of the distillation column. If desired, the two distillates can be recycled to the separation zone.

Also disclosed are compositions of hydrogen fluoride in combination with an effective amount of CF.sub.3CClFCF.sub.3 to form an azeotrope or azeotrope-like composition with hydrogen fluoride. Included are compositions containing from about 38.4 to 47.9 mole percent CF.sub.3CClFCF.sub.3.

Also disclosed are processes for producing 1,1,1,2,3,3,3-heptafluoropropane. One process uses a mixture comprising **HF** and CF.sub.3CClFCF.sub.3 and is characterized by preparing essentially pure CF.sub.3CClFCF.sub.3 as indicated above, and reacting the CF.sub.3CClFCF.sub.3 with hydrogen. Another process uses an azeotropic composition as described above, and reacts the CF.sub.3CClFCF.sub.3 with hydrogen in the presence of **HF**.

Also disclosed is a process for producing hexafluoropropene. This process is characterized by preparing essentially pure CF.sub.3CClFCF.sub.3 as indicated above, and dehalogenating the CF.sub.3CClFCF.sub.3.

L12 ANSWER 3 OF 4 USPATFULL on STN
AN 2001:226805 USPATFULL
TI Processes for the production of hexafluoropropene and optionally other halogenated hydrocarbons containing fluorine
IN Sievert, Allen Capron, Elkton, MD, United States
Rao, V. N. Mallikarjuna, Wilmington, DE, United States
Walczak, Francis J., New Castle, DE, United States
PA E. I. du Pont de Nemours and Company, Wilmington, DE, United States (U.S. corporation)
PI US 6329559 B1 20011211
WO 9962851 19991209
AI US 2000-701448 20001127 (9)
WO 1999-US12246 19990602
20001127 PCT 371 date
20001127 PCT 102(e) date
PRAI US 1998-87751P 19980602 (60)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Siegel, Alan
CLMN Number of Claims: 20
ECL Exemplary Claim: 1
DRWN 1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 961

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A process is disclosed for the manufacture of CF.sub.3 CF.dbd.CF.sub.2, and optionally a least one compound selected from CF.sub.3 CH.sub.2 CF.sub.3 and CF.sub.3 CHFCHF.sub.2. The process involves contacting a reactor feed including a precursor stream of at least one halogenated propane of the formula CX.sub.3 CH.sub.2 CH.sub.y X.sub.(3-y) and/or halogenated propene of the formula CX.sub.3 CH.dbd.CH.sub.y X.sub.(2-y), where each X is Cl or F and y is 0, 1 or 2 (provided that the average fluorine content of the precursor stream is no more than 5 fluorine substituents per molecule) with **HF** and Cl.sub.2 in a chlorofluorination reaction zone containing a fluorination catalyst and operating at a temperature between about 150.degree. C. and 400.degree. C., to produce a reaction zone effluent including **HF**, HCl and a mixture of reaction products of the precursor feed which contains at least one compound of the formula C.sub.3 Cl.sub.2 F.sub.6 including CClF.sub.2 CClFCF.sub.3 and at least one compound of the formula C.sub.3 HClF.sub.6, including CHF.sub.2 CClFCF.sub.3 and has an average fluorine content which is at least one fluorine substituent per molecule more than the average fluorine content of the precursor stream. The chlorofluorination reaction zone effluent is distilled to produce (i) a low-boiling component including HCl (and when they are present in the reaction zone effluent, C.sub.3 F.sub.8, C.sub.3 ClF.sub.7 and C.sub.3 **HF**.sub.7), (ii) a hydrogenation feed component containing at least one compo of the formula C.sub.3 Cl.sub.2 F.sub.6 including CClF.sub.2 CClFCF.sub.3 and at least one compound of the formnula C.sub.3 HClF.sub.6 including CHF.sub.2 CClFCF.sub.3, and an underfluorinated component including halogenated propanes containing at least one chlorine subtituent and from one to five fluorine substituents. The CClF.sub.2 CClFCF.sub.3 and CHF.sub.2 CClFCF.sub.3 of hydrogenation feed component (ii) is reacted with hydrogen to produce a mixture including CF.sub.3 CF.dbd.CF.sub.2 and CF.sub.3 CHFCHF.sub.2 and the CF.sub.3 CF.dbd.CF.sub.2 from this product mixture is recovered. Underfluorinated component (iii) is returned to the chlorofluorination reaction zone.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L12 ANSWER 4 OF 4 USPATFULL on STN
AN 2000:10072 USPATFULL
TI Process for the production of fluorocarbons
IN Manogue, William H., Newark, DE, United States
Nappa, Mario Joseph, Newark, DE, United States
Sievert, Allen Capron, Elkton, MA, United States
Rao, V. N. Mallikarjuna, Newark, DE, United States
PA E. I. du Pont de Nemours and Company, Wilmington, DE, United States (U.S. corporation)
PI US 6018083 20000125
AI US 1999-283450 19990401 (9)
PRAI US 1998-80708P 19980403 (60)
DT Utility
FS Granted
EXNAM Primary Examiner: Siegel, Alan
CLMN Number of Claims: 3
ECL Exemplary Claim: 1
DRWN 1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 495
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A process is disclosed for the separation of a mixture of **HF** and CF.sub.3 CClFCF.sub.3. The process involves placing the mixture in a separation zone at a temperature of from about -30.degree. C. to about 100.degree. C. and at a pressure sufficient to maintain the mixture in the liquid phase, whereby an organic-enriched phase comprising less than 50 mole percent **HF** is formed as the bottom layer and an **HF**-enriched phase comprising more than 90 mole percent

HF is formed as the top layer. The organic-enriched phase can be withdrawn from the bottom of the separation zone and subjected to distillation in a distillation column to recover essentially pure CF.sub.3 CClFCF.sub.3. The distillate comprising **HF** and CF.sub.3 CClFCF.sub.3 can be removed from the top of the distillation column while essentially pure CF.sub.3 CClFCF.sub.3 can be recovered from the bottom of the distillation column. The **HF**-enriched phase can be withdrawn from the top of the separation zone and subjected to distillation in a distillation column. The distillate comprising **HF** and CF.sub.3 CClFCF.sub.3 can be removed from the top of the distillation column while essentially pure **HF** can be recovered from the bottom of the distillation column. If desired, the two distillates can be recycled to the separation zone.

Also disclosed are compositions of hydrogen fluoride in combination with an effective amount of CF.sub.3 CClFCF.sub.3 to form an azeotrope or azeotrope-like composition with hydrogen fluoride. Included are compositions containing from about 38.4 to 47.9 mole percent CF.sub.3 CClFCF.sub.3.

Also disclosed are processes for producing 1,1,1,2,3,3,3-heptafluoropropane. One process uses a mixture comprising **HF** and CF.sub.3 CClFCF.sub.3 and is characterized by preparing essentially pure CF.sub.3 CClFCF.sub.3 as indicated above, and reacting the CF.sub.3 CClFCF.sub.3 with hydrogen. Another process uses an azeotropic composition as described above, and reacts the CF.sub.3 CClFCF.sub.3 with hydrogen in the presence of **HF**.

Also disclosed is a process for producing hexafluoropropene. This process is characterized by preparing essentially pure CF.sub.3 CClFCF.sub.3 as indicated above, and dehalogenating the CF.sub.3 CClFCF.sub.3.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> d his

(FILE 'HOME' ENTERED AT 11:22:31 ON 26 JAN 2004)

FILE 'REGISTRY' ENTERED AT 11:22:51 ON 26 JAN 2004
L1 1 S 2,2-DICHLOROHEXAFLUOROPROPANE/CN
L2 1 S 2-CHLOROHEPTAFLUOROPROPANE/CN
L3 1 S 1,1,1,2,3,3,3-HEPTAFLUOROPROPANE/CN
L4 1 S L3

FILE 'CAPLUS, USPATFULL' ENTERED AT 11:34:27 ON 26 JAN 2004
L5 17 S 2,2-DICHLOROHEXAFLUOROPROPANE
L6 3 S L5 AND 2-CHLOROHEPTAFLUOROPROPANE
L7 43 S ?216AA
L8 10 S L7 AND ?217BA
L9 9 S L8 NOT L6
L10 9 DUP REM L9 (0 DUPLICATES REMOVED)
L11 9 S L10 AND HF
L12 4 S L11 AND ?227EA

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